



## AWARENESS ON POST EXPOSURE PROPHYLAXIS FOR HIV AMONG UNDERGRADUATE MEDICAL STUDENTS IN TERTIARY CARE HOSPITAL, GUNTUR

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### ABSTRACT

**Context:** Post exposure prophylaxis of HIV is the only way to reduce the risk of HIV after potential exposure to infectious blood and body fluids. This study was conducted to assess the knowledge regarding post exposure prophylaxis of HIV among medical students in KMCH.

#### Aims:

- 1) To assess the knowledge of PEP among medical students
- 2) To create awareness on PEP

**Settings and Design:** This was a cross-sectional, semi-structured questionnaire based study conducted among 6th and 8th semester students.

**Methods and Material:** Questionnaire consists a total of 11 questions. 9 were knowledge questions and 2 were attitude questions. Knowledge and attitude were assessed and categorized based on correct answers as good (7 or more, 3 or more), moderate (5-6, 2) and poor (<4, 1) respectively.

**Statistical analysis used:** Microsoft excel sheet.

**Results:** Total 195 students participated in the study. Knowledge and attitude scores were 8 out of 11 and 3.5 out of 4. 99.5% had heard about PEP for HIV. Majority of the students were aware of drugs used in PEP. The students of 6th and 8th semester respectively gave correct response (52% and 62%) for best time period for initiation of therapy, (50% and 60%) for duration of treatment.

**Conclusions:** The knowledge levels of undergraduate medical students are moderate and their attitude on PEP is good. There is no significant difference of knowledge and attitude levels of 6th and 8th semester students on HIV PEP. Awareness programs needed to be conducted to improve knowledge.

**KEYWORDS :** PEP, Initiation of PEP, Duration of PEP.

### Introduction:

HIV and AIDS are well established problems, particularly in India. India has about 2.1 million people living with HIV, the third largest population of people infected with the virus.<sup>1</sup> Approximately about one thousand cases of accidental exposure to HIV are reported every year.<sup>2</sup> In case of HIV exposure, Post Exposure Prophylaxis is a course of antiretroviral drugs which reduces the risk of sero conversion after events with high risk of exposure to HIV.<sup>3</sup>

The CDC estimates that more than 385,000 sharps related injuries occur in hospitals each year.<sup>4</sup> This shows the potential risk to the medical team in getting injured from the sharp instruments. Medical students also form an integral part of the health care team and are thus at risk of acquiring HIV or other blood borne pathogens during the hospital placements.

### Objectives:

- To assess the knowledge of PEP among medical students.
- To create awareness on PEP.

### Methods and Methodology

The present study was a cross sectional study. A semi structured questionnaire was prepared to evaluate knowledge and attitude on PEP. Students of 6th and 8th semesters were included in the study. All students who were willing to participate in the study were included and who didn't give the consent were excluded from the study. Institutional Ethics Committee (IEC) clearance was obtained prior to the beginning of study. Strict anonymity was assured. Details of the study and intention behind the survey were explained clearly before administering the questionnaire. Informed consent was taken and questionnaires were administered.

Questionnaire consists of general information of the participants and a total of 11 questions of which 9 were knowledge questions and 2 were attitude questions. Knowledge was assessed and categorised as good (7 or more correct answers), moderate (5-6 correct answers) and poor (<4 correct answers). Attitude was assessed and categorised as good (3 or more correct answers), moderate (2 correct answers) and poor (1 correct answer).

The obtained data was entered in Microsoft excel sheet. The results were expressed in the form of frequencies and percentages and age in mean and standard deviation.

### Results:

Total of 195 medical students in their academic years 2015-2016 were included in the study. 90 students from 6th semester and 105 students from 8th semester participated in the study. The mean age of the students is 20.72 with standard deviation (S.D) 0.93. (Table 1) TABLE-1: General Information

**TABLE-1: General Information**

S.No	Details	N (%)
1.	Gender	119 (61%)
	Female	76 (39%)
	Male	
2.	Age	
3.	Year of Study	90 (46.2%)
	6 <sup>th</sup> semester	105 (53.8%)
	8 <sup>th</sup> semester	

### Knowledge on PEP:-

Students of both 6th and 8th semester had mean knowledge score of 8 out of 11. 99.5% (n=194) of students have heard about PEP. The main source of information for PEP was textbooks [88.9% (n=80)] in

6th semester and 87.6% (n=92) in 8th semester] followed by seminars and workshops followed by newspapers and journals. 82.1% (n=160) of students are aware that needle prick injury is an indication for PEP but they are unaware of the right proportion of needle prick injuries resulting in transmission of HIV

83.1% (n=162), 34.4% (n=67), 28.2% (n=55), 24.1% (n=47) participants identified breast milk, cerebrospinal fluid, saliva and peritoneal fluid respectively as a risk fluid for HIV transmission. 52% (n=47) of 6th semester students and 62% (n=65) of 8th semester students were aware that PEP must be started within 72 hrs after exposure. 81.1% (n=73) in 6th semester and 92.4% (n=97) in 8th semester were aware of drugs in PEP regimen but Students knowing about Duration of PEP were found to be 50% and 60% in 6th and 8th semesters respectively. Timing of antibody testing was correctly identified by 52.2% of 6th semester and 51.4% of 8th semester. (Table 2)

**TABLE-2: Knowledge on PEP**

Variables and responses	6th semester Number (Percentage)	8th semester Number (Percentage)	Total Number (Percentage)
<b>No of students heard about PEP</b>	90 (100%)	104 (99%)	194 (99.5%)
YES	90(100%)	1 (1%)	1 (0.5%)
104(99%)			
194(99.5%)			
NO			
<b>Source of PEP (multiple answers accepted)</b>	13 (14.4%)	13 (12.4%)	26 (13.3%)
Newspaper	6 (6.7%)	6 (5.7%)	12 (6.15%)
Journal	8 (8.9%)	16 (15.2%)	24 (12.3%)
Television	0 (0%)	4 (3.8%)	4 (2.1%)
Radio	17 (18.9%)	2 (1.9%)	43 (22.1%)
Seminar and workshops	7 (7.8%)	17 (16.2%)	24 (12.3%)
Ward rounds	2 (2.2%)	2 (1.9%)	4 (2.1%)
PEP training	80 (88.9%)	92 (87.6%)	172 (88.2%)
Textbooks	1 (1.1%)	2 (1.9%)	3 (1.5%)
Can't remember			
<b>Proportion of needle prick injuries from HIV infected Person result in transmission</b>	70 (77.7%)	86 (81.9%)	143 (73.3%)
1/1000			
<b>High risk fluids for the transmission of HIV (multiple answers accepted)</b>	81 (90%)	81 (77.1%)	162 (83.1%)
Breast milk	10 (11.1%)	10 (9.5%)	20 (10.26%)
Urine	14 (15.6%)	33 (31.4%)	47 (24.1%)
Peritoneal fluid	24 (26.7%)	31 (29.5%)	55 (28.2%)
Saliva	17 (18.9%)	28 (26.7%)	45 (23.1%)
Pleural fluid	29 (32.2%)	38 (36.2%)	67 (34.4%)
Cerebrospinal fluid	0 (0%)	3 (2.9%)	3 (1.5%)
Feces	18 (20%)	24 (22.9%)	42 (21.5%)
Synovial fluid			
<b>Indication for initiation of PEP (multiple answers accepted)</b>	67 (74.4%)	93 (88.6%)	160 (82.1%)
Needle prick injury	33 (36.7%)	48 (45.7%)	81 (41.5%)
Rape	48 (53.3%)	70 (66.7%)	118 (60.5%)
Splashing of blood or body fluids on mucosal surfaces	62 (68.9%)	86 (81.9%)	148 (75.9%)
Infants born to HIV positive mothers			

<b>First aid measure to institute following needle prick injury</b>	11 (12.2%)	9 (8.6%)	20 (10.3%)
Promote active bleeding	69 (76.7%)	77 (73.3%)	146 (74.9%)
Wash thoroughly with soap and water	10 (11.1%)	19 (18.1%)	29 (14.8%)
Don't know			
<b>How soon after needle prick Injury PEP must be started (most appropriate time)</b>	47 (52.2%)	65 (61.9%)	112 (57.4%)
Within 72hrs			
<b>HIV PEP regimen following Needle prick injury</b>	32 (35.6%)	47 (44.8%)	79 (40.5%)
2 drug regimen	58 (64.4%)	58 (55.2%)	116 (59.5%)
Expanded 3 drug regimen			
<b>Drugs used in PEP (multiple answers accepted)</b>	73 (81.1%)	97 (92.4%)	170 (87.2%)
Zidovudine	53 (58.9%)	68 (64.8%)	121 (62%)
Lamivudine	32 (35.6%)	47 (44.8%)	9 (4.6%)
Nevirapine			
<b>Duration of PEP with anti retroviral drugs</b>	45 (50%)	63 (60%)	108 (55.3%)
4 weeks			
<b>Timing of antibody testing to rule out infection</b>	47 (52.2%)	54 (51.4%)	101 (51.8%)
4-6weeks			

**Attitude on PEP:-**

Students of both 6th and 8th semester had mean attitude score of 3.5 out of 4 on PEP. 90% of students showed interest to attend and participate in PEP orientation program. 85.6% of 6th semester and 94.3% of 8th semester students felt that periodical PEP sensitization programmes are needed. 80% of 6th semester and 83.8% of 8th semester students opined that PEP awareness is to be extended to paramedical staff. (Table 3)

**TABLE-3: Attitude on PEP**

Variables and Responses	6th semester Number (Percentage)	8th semester Number (Percentage)	Total Number (Percentage)
<b>Have you ever had training on PEP?</b>	0 (0%)	0 (0%)	0 (0%)
Yes	90 (100%)	105 (100%)	195 (100%)
No			
<b>Are you willing to participate in PEP awareness programs?</b>	80 (88.9%)	96 (91.4%)	176 (90.3%)
Yes	10 (11.1%)	9 (8.6%)	19 (9.7%)
No			
<b>Do you feel any need for periodical PEP sensitization programs in your institute?</b>	77 (85.6%)	99 (94.3%)	176 (90.3%)
Yes	13 (14.4%)	6 (5.7%)	19 (9.7%)
No			
<b>Do you think that, there is a need to extend PEP awareness to paramedical staff?</b>	72 (80%)	88 (83.8%)	160 (82.1%)
Yes	18 (20%)	17 (16.2%)	35 (17.9%)
No			

## Discussion:

Our study revealed that the majority of medical students had moderate knowledge on PEP, which was compared to that one reported among health care workers in Gondar, Ethiopia (92.8 %) and in Nigeria (97 %).<sup>5,6</sup>

The main source of knowledge on PEP among medical students in this study was Text books and journals, because of more classroom orientation. This is in contrast to findings of Leopold et al., which revealed 'ward rounds' to be the main source of knowledge.<sup>7</sup>

In the present study, 83.1% of the participants had knowledge that high risk body fluids for transmission of HIV is Breast milk followed by cerebrospinal fluid (34.4%), saliva (28.2%), peritoneal fluid (24.1%), pleural fluid (23.1%), synovial fluid (21.5%), urine (10.26%) and faeces (1.5%) respectively. These findings are supported by a study of Foster et al., which showed that, participants considered the following fluids, not blood stained, high risk for HIV transmission: breast milk (79%), saliva (14%), urine (27%), pleural fluid (53%), CSF (55%), synovial fluid (37%), faeces (27%) and peritoneal fluid (53%).<sup>8</sup>

In the present study 74.9% of the participants had knowledge about the fact that washing the site immediately with soap and water is the first-aid procedure after needle prick injury. This finding is more than that of the study conducted by et al., in which only 48% of the respondents had knowledge about this.<sup>9</sup>

In our study 57.4% of the students had knowledge about the best time for initiation of PEP. This finding is supported by a study of Alenyo et al., which showed that 51.8 % of respondents had knowledge about best time for initiation of PEP.<sup>10</sup> The proportion was higher than the 33 % reported among junior doctors,<sup>11</sup> 31.6 % among medical interns<sup>12</sup> and far below the 93.7 % reported among family physicians in Nigeria.<sup>13</sup> PEP MED Students

About a 59.5% of medical students knew that the ideal PEP regimen was the three-drug regimen. However, the two drugs regimen is likewise efficacious according to WHO guidelines.<sup>14</sup>

In concerning common drug regimen of PEP, 87.2% and 62% had correctly identified the drugs used are Zidovudine and Lamivudine respectively, which was found to be greater than the one reported in a study of Owolabi et al., which showed that 30.9% of the respondents could correctly identify the drugs used and duration of PEP.<sup>15</sup>

## Conclusion:

The knowledge levels of undergraduate medical students are moderate and their attitude on PEP is good. There is no significant difference of knowledge and attitude levels of 6th and 8th semester students on HIV PEP. Awareness programs needed to be conducted to improve knowledge.

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